

home environment, and therefore one cannot expect behavior there to be precisely the same as at home.

Our suggestion that the strange situation elicits behavior that is essentially characteristic of the infant should not be taken to imply that there may not be factors either present in the situation or operating immediately before the situation that may influence strange-situation behavior so that it is not characteristic of the child. For example, we omitted two infants from the sample because we later discovered that they were ill, with high fevers—indeed, they showed little or no exploratory behavior in the strange situation. It is conceivable that a baby's strange-situation behavior might be influenced in an "uncharacteristic" direction by uncharacteristic mother–infant interaction on the way to the laboratory, or at home earlier. Where such unusual circumstances are known to the investigator, it would obviously be prudent to discard the data, or interpret it with great caution—or better still to wait until another time to introduce the baby to the strange situation. It is difficult, however, to believe that the significant and complex interrelationships that have emerged in our data between strange-situation behavior and behavior elsewhere could have occurred had temporary factors leading to uncharacteristic behavior in the strange situation played other than a minor role.

Now let us consider the characteristic behavior of the infants classified in each of the three major groups and offer our interpretation of it.

### GROUP B

The typical Group-B infant is more positive in his behavior toward his mother than are the infants of the other two classificatory groups. His interaction with his mother is more harmonious, and he is more cooperative and more willing to comply with his mother's requests, both in the last quarter of his first year and later on in the second year. From this we may infer that his affect toward his mother is more positive and less ambivalent and conflicted. This inference is supported by the fact that the infants in the other two groups cry more and specifically show more separation disturbance at home than the Group-B infants—which we interpret to mean that Group-B infants are generally less anxious. It is perhaps particularly noteworthy that they appear to be positive and unconflicted in their response to close bodily contact with the mother, both in the strange situation and at home. The data from our own longitudinal study, as well as data from the studies reported in Chapter 9, support us in our interpretation that Group-B infants are securely attached to their mother figures. Let us interpret behavior in the strange situation in light of these conclusions.

First, the typical Group-B infant uses his mother as a secure base from which to explore an unfamiliar environment, just as at home he spends a large

### INTRODUCTION

In this chapter we focus chiefly on our own data and on the information about individual differences in infant–mother attachment that they provide; for it is these data that constitute our main case for claiming that our attachment construct can contribute substantially to an understanding of how qualitative differences in attachments arise, how they manifest themselves in behavior, and how they influence subsequent development. The data of particular relevance here are those relating an infant's behavior in the strange situation to: (1) his behavior at home in the fourth and first quarters (Chapter 7); and (2) maternal behavior at home during the same time periods (Chapter 8). We also refer to the work of others, especially to those who relate strange-situation behavior to the behavior of infants and mothers in other situations some months later (Chapter 9). Striking though these data may be in support of our argument that the patterns of strange-situation behavior reflected in the A-B-C classificatory groups are dynamically related to both infant and maternal behavior in other settings both before and after the strange situation, the purely empirical data gain heightened significance within the framework of theory. Let us then combine empirical data and theoretical considerations when presenting our explanations of the hypothesized dynamics of the three major classificatory groups.

In the discussion to follow, we have placed much emphasis on behavior in the strange situation as behavior that is essentially characteristic of the infant. It must be recalled, however, that the design of the strange situation activates attachment behavior at higher intensity than is usually the case in the familiar

amount of his time in exploratory play. In the very small sample we took of such behavior in Episode 2—*together* with the fact that this episode provides very strong instigation to exploratory behavior—it is perhaps not surprising that there is very little attachment behavior interspersed with exploratory behavior, whereas at home we can perceive a better-rounded picture of the balance between attachment and exploratory behavior.

Second, we wish to comment further on the fact that at home the typical Group-B baby is not likely to cry when his mother leaves the room. Even when she is out of sight, he nevertheless usually believes she is accessible to him and would be responsive should he seek her out or signal to her. It is our hypothesis that expectations of her accessibility and responsiveness have been built up through his experience of her generally sensitive responsiveness to his signals and communications. Such experience has been repeatedly confirmed by interactions with her in many different contexts—including feeding, face-to-face, close bodily contact, and by her response to his crying—throughout the whole of his first year. By the end of the first year it is probably only when attachment behavior has already been activated to some extent by conditions such as fatigue, hunger, or illness, or by some unaccustomed and somewhat alarming circumstance, that he protests her departure and/or continuing absence. His expectations of his mother's accessibility and responsiveness may carry over to the strange situation so that he may not protest her first departure in Episode 4. Nevertheless it would appear likely that his attachment-behavioral system has been activated to some extent, for his exploratory behavior is less active than in Episode 2; and, as Sroufe and Waters (1977b) have shown, he shows a characteristic acceleration of heart rate on her departure, whether he cries or not. The combination of the unfamiliarity of the situation, the length of his mother's absence, and especially a second and even longer separation in Episodes 6 and 7, tends to invalidate his expectations that his mother is accessible to him when she is out of sight in *this* unfamiliar environment, so that his attachment behavior tends to be activated at high intensity, and he tends to cry or to try to follow his mother (or does both) in Episode 6.

Regardless of whether he protested his mother's departure in one or another separation, his response to her return demonstrates that the attachment-behavior system had indeed been intensely activated by separation, for he tends immediately to seek not only proximity to her but also (especially in the case of the normative Subgroup B<sub>1</sub>) close bodily contact. He may be sufficiently reassured by her return that he ceases crying as soon as she returns, but if he has been acutely distressed (as is common during the second separation) it may take a few moments for him to stop crying. Nevertheless, it is noteworthy that the typical Group-B infant is quickly soothed by close bodily contact with his mother. The intensity of the activation of his attachment-behavior diminishes only gradually, however, as he is held by

his mother and in turn clings to her or nestles close to her, for if she tries to put him down prematurely he actively resists release. He seems to need a minute or two of close contact before attachment behavior is terminated and before the instigation to exploration provided by the array of toys (perhaps supported by his mother's efforts to involve him again with the toys) is again relatively strong enough to override the attachment system. That the Group-B baby should both seek contact and be soothed by it could have been expected from his long history of positive experience in the context of close bodily contact with his mother.

Finally, let us consider three effects of a secure attachment to the mother—effects in the sense of assessments of behavior of Group-B babies that occurred either substantially later or at least entirely independent of either the strange-situation classification at the end of the first year or the kinds of mother-infant interaction at home that led us to conclude that Group-B behavior in the strange situation may be interpreted as reflecting secure attachment. First, Group-B babies tend to be more readily "socialized"—that is, more cooperative and willing to comply with mother's commands and requests—than non-B babies (as shown directly by Main & Londerville, 1978, and Matas, 1977, and indirectly by Slayton, Hogan, & Ainsworth, 1971). Slayton and associates have provided an ethological interpretation of this finding—namely, that the baby's attachment behavior is adapted (in an evolutionary sense) to an environment that includes a primary caregiver responsive to his needs, signals and communications. When this feature of the environment of evolutionary adaptedness is approximated in the contemporary situation, the baby responds with a general orientation toward behaving in accordance with the demands of such a figure: he is predisposed to comply with her efforts to control his behavior across a distance through signals and verbal commands. Such a predisposition is viewed as adaptive, insofar as infant response to signals across a distance extends the protective function of the mother figure (primary attachment figure) beyond the early period during which baby and mother, through their complementary attachment behaviors, remain in close proximity to each other.

Second, babies deemed to have a secure attachment to the mother figure are found to be more positively outgoing to and cooperative with relatively unfamiliar adult figures than is true for those deemed to be anxiously attached. Our chief support for this conclusion comes from Main (1973, 1977a), who showed that Group-B infants, more readily than non-B infants, respond positively to a familiarized adult playmate and cooperatively to the examiner who administers the Bayley test.

Third, babies who in the first year have a secure relationship with the mother tend to be more competent than babies whose relationship has been characterized as anxious. They explore more effectively and more positively, and thus they have a headstart in learning about the salient features of the

environment (Main, 1973, 1977b). They are more enthusiastic, affectively positive, and persistent, as well as less easily frustrated, in problem-solving tasks (Matas, 1977). They tend to receive significantly higher scores on developmental tests both in the first year and later (Ainsworth & Bell, 1974; Bell, 1978; Main, 1973, 1977b), although to what extent this is attributable to development that has somehow been accelerated by the infant's secure relationship with his mother (including his ability to use his mother as a secure base for exploration) and to what extent it is attributable to the fact that the Group-B infant is more cooperative with the examiner and more likely to show a "game-like spirit" in the test situation (Main, 1973, 1977b) is difficult (and perhaps fruitless) to attempt to disentangle.

In conclusion, we may conclude that Group-B infants have secure attachments to their mothers, and thereby enjoy an advantage in various aspects of social and cognitive development.

### GROUP C

We can say less about Group-C babies than about the other groups, if only because they have proved to be the least numerous group in any of the samples so far assembled, whether by ourselves or by other investigators. Nevertheless certain aspects of their experience seem fairly clear. Their mothers are much less responsive to crying and to signals and communication in general than are Group-B mothers. On the other hand, their mothers are not rejecting like Group-A mothers, and in particular they seem to have no aversion to physical contact with their babies, nor do they tend to be as compulsive or as lacking in emotional expression as Group-A mothers. Therefore there is no reason to expect Group-C babies to have the kind of approach-avoidance conflict that we believe to be characteristic of Group-A babies.

Nevertheless there is every reason to believe that Group-C infants are anxious in their attachment to the mother. Both at home and in the strange situation, they cry more than Group-B babies. They manifest more separation anxiety. They do not seem to have confident expectations of the mother's accessibility and responsiveness. Consequently they are unable to use the mother as a secure base from which to explore an unfamiliar situation—at least not as well as infants in Group B; in Episode 2 it seems to be only Group-C infants who are distressed. Furthermore, they are more likely to be distressed and/or to seek proximity to the mother when the stranger is present in Episode 3, as though wariness/fear of the stranger, combined with anxiety about the mother's accessibility and responsiveness, constitute a compound fear situation (Bowlby, 1973). Because they are chronically anxious in relation to the mother, they tend to respond to the mother's departures in the separation

episodes with immediate and intense distress; their attachment behavior has a low threshold for high-intensity activation.

Perhaps because their mothers tend to lack the fine sense of timing that is characteristic of Group-B mothers (which is shown in the latter by sensitivity to infant signals in all kinds of contexts), their experience in close bodily contact has not been as consistently positive as that enjoyed by B babies. Consequently, even at home they seem more ambivalent about physical contact than B babies. This ambivalence reflects a kind of conflict that differs from that characteristic of A babies, however. They protest—and presumably protest angrily—if the mother's pick-up is badly timed; but they especially protest if they are not picked up when they want to be, or if they are put down when they still want to be held. This is the kind of angry ambivalence (scored as resistant behavior) that is conspicuous in C babies in the strange situation, and especially in the reunion episodes. They are slower to be soothed than B babies; they are angry when their mothers do not pick them up but rather attempt to play with them; and even when they are picked up, the accumulated frustration of attachment behavior activated by separation at a high level of intensity may lead them to mingle angry resistance with clinging and with other manifestations of contact-maintaining behavior. Thus, on the whole, Group-C babies seem to behave in the strange situation very much as one might expect from the way they behave at home, assuming that one acknowledges that the instigation to both attachment behavior and anger is more intense in the strange situation.

Main (1973, 1977b) has suggested that Group-C infants are handicapped by their anxiety in leaving the mother to explore and learn through their explorations, and hence it is they, more than Group-A infants, who advance more slowly in cognitive development than do securely attached infants. Matas (1977) found that Group-C toddlers were easily frustrated, overreliant on their mothers, and generally incompetent in problem-solving situations. Connell (1974) reported that Group-C infants were so distressed by the novel stimulus object that his habituation experiment had to be terminated.

Group C is a heterogeneous group. We should like to draw attention to the babies of Subgroup C<sub>1</sub>, who were very passive. It is difficult to say how much of the difference between Groups C and B in regard to competence, developmental measures, exploration, problem solving, and the like are attributable to this passive subgroup. We suggest that C<sub>2</sub> babies have a poorer prognosis than C<sub>1</sub> babies. Passivity is notoriously resistant to treatment and reversal in later years. The passive-aggressive personality—the criteria for which fit our C<sub>2</sub> babies very well, even in the first year of life—is obviously associated with profound problems in dealing with the issues and challenges of later life. From our point of view the passivity of the C<sub>2</sub> infant seems to be deeply rooted. An infant whose mother almost never responds contingently

to his signals must have a profound lack of confidence in his ability to have any effective control of what happens to him.

#### GROUP A

We have mentioned that the contrast between behavior at home and in the strange situation presents an apparent paradox in the case of Group-A babies. Furthermore, it was long a puzzle to us that Group-A babies in the strange situation were so different from Group-C babies, even though their behavior at home resembled that of C babies in many ways. In particular both cried more, and more frequently showed separation anxiety than did Group-B babies. The paradox lies in the relatively frequent separation distress the Group-A baby shows at home, whereas in the separation episodes of the strange situation he cried little or not at all. The key to understanding Group-A behavior seemed obviously to lie in their avoidance of the mother in those very episodes of the strange situation in which the attachment behavior of other babies was activated at high intensity—in the reunion episodes. It has taken some years, however, to arrive at an interpretation of Group-A behavior that seems to account for all the facts at our disposal and not merely for those two most conspicuous facts. We began (Ainsworth & Bell, 1970) by noting the similarity between avoidance of the mother in the reunion episodes and the "detachment" behavior that has been observed to result from "major" separation experiences—both during the separation itself and upon reunion—and sometimes persisting long after the initial reunion (Heinicke & Westheimer, 1966; Robertson & Bowlby, 1952). We suggested that both mother avoidance in the strange situation and detachment during and after longer separations served a defensive function. Our next clue (Ainsworth, Bell, & Stayton, 1971) was to note that the mothers of Group-A infants were more rejecting than either Group-B or Group-C mothers. The major progress in interpretation of Group-A behavior is due to the work of Main, both through her own research with the infants of Samples 3 and 4 and through intensive additional analyses of our home data in Sample 1 (Main, 1973, 1977a; Biehar, Ainsworth, & Main, 1978). In the interpretation which follows we are deeply indebted to Main and her work.

Mothers of Group-A babies were indeed demonstrated to be rejecting. One major way in which they rejected their infants was to rebuff infant desire for close bodily contact. These mothers themselves tended to find close contact with their babies aversive. Furthermore, Main confirmed the implications of our acceptance-rejection rating scale, in that Group-A mothers tend more frequently to be angry with and irritated by their babies than other mothers; even though they attempt to suppress expression of anger, videotape records make it manifest to the careful observer. It is perhaps because of chronically

suppressed anger that Group-A mothers tend to lack mobility in their characteristic facial expression while in interaction with their infants. Group-A mothers are also found to be characteristically rigid and compulsive. This trait is likely to activate anger when the baby's demands interrupt the mother's ongoing activities or when he does not instantly do what she wants him to do. Whether because irritation engenders rough handling or because compulsiveness leads to the use of physical force, the mother tends to give her baby unpleasant experiences in the context of physical contact. Furthermore, the unresponsiveness or overt rebuff a baby experiences from a mother who finds physical contact with him aversive itself constitutes a frustrating, unpleasant experience.

Those babies in Sample 1 who were eventually identified as Group-A babies on the basis of their strange-situation behavior were at the beginning quite capable of responding positively to close bodily contact—as the visitor-observers themselves ascertained by picking up the babies. We assume that they, like other human infants, wanted contact with their mother when the attachment-behavioral system was activated at high intensity. Maternal rebuff itself (Bowlby, 1969) is a condition that activates or increases the intensity of activation of attachment behavior. On the other hand, their unhappy experiences with their mothers in the context of close bodily contact set the stage for the approach-avoidance conflict over close contact with their mothers that seems characteristic of A babies.

In Chapter 7 we detailed the various behaviors that made this conflict manifest to the observer of their behavior at home. Main suggested that another outcome of their experience was that their attachment behavior, even though more frequently aroused than in the case of babies who have experienced little rebuff, tended not to be terminated, for they rarely had the well-rounded experience of being cuddled and soothed by their mothers that is the most effective terminator of intensely activated attachment behavior. Following Bowlby's (1973) proposition that the continuing frustration of attachment behavior experienced in a major separation engenders anger, Main (1977a) argued that Group-A infants, whose attachment behavior is also chronically frustrated, tend to be angry infants. It is difficult for an observer to distinguish the expression of anger from the expression of other feelings and emotions, such as fear or distress, in the case of a young infant. By the fourth quarter of the first year, however, it becomes feasible to do so. A coder working without knowledge of strange-situation classifications yielded data that demonstrated that Group-A babies were indeed more frequently angry than the other infants of Sample 1.

Let us return to a consideration of avoidant behavior in the reunion episodes of the strange situation. The most striking avoidance is steadfast ignoring of the mother, despite her efforts to coax the baby to come to her. This is striking also when the baby begins to approach his mother but then suddenly turns

away or moves away from her. Also classed as avoidant behavior, however, are instances in which the baby, having looked at or even greeted his mother, averts his gaze, thus interrupting or discouraging interaction between them. Gaze aversion in the strange situation is common enough, but it usually occurs in Episode 3, in response to the stranger's entrance and/or approach. Thus, it is not the behavior pattern, gaze aversion, that is unusual per se, but the fact that it occurs with reference to the mother in a context in which the normative response is either to gain contact with her or at least to reestablish interaction with her. Gaze aversion in early infancy has been suggested by Stern (1974) to be a baby's means of modulating his level of arousal when in face-to-face encounters with his mother. Intermittent gaze aversion alternates with interaction, as though the baby had occasionally to look away in order to cope with the presumably pleasant but exciting engagement. Bronson (1972) and Sroufe, Waters, and Matas (1974) have also suggested that gaze aversion, in the context of encounter with strangers, may constitute a coping mechanism. Yet gaze aversion, as well as other modes of avoidant behavior that occur in the 1-year-old in the context of reunion with the mother seems to be of a different order.

Main (1977a) offers a hypothesis that, in our opinion, both accounts for avoidant behavior toward the mother in the strange situation and links this response to the other findings on gaze aversion in human infants. She draws on Chance's (1962) hypothesis that gaze aversion can be interpreted as a "cut-off behavior." Examples of cut-off behavior—averting the eyes, turning the head away or down, displacing or redirecting the attention, and closing the eyes—are identical with behaviors that we have classed as avoidance behavior. Chance observed this kind of behavior in terns, gulls, and other birds (but also in rats) in the context of an approach-avoidance conflict. For example, the male black-headed gull, a highly territorial creature, experiences conflict in courtship because he not only acts so as to attract a female into his territory but also has strong tendencies either to fight with or flee from any conspecific who intrudes on his territory. In the course of the courtship display, after a female has approached, the male shows certain postures that are clearly avoidance—averting the gaze and posturing so as to turn away from the prospective mate. Chance suggests that the sight of the partner might activate the aversive drives of flight or aggression, whereas looking and turning away defuses the situation, so that the male can stay in the proximity of the female rather than either fleeing from her or driving her away, thus leaving the possibility open for further, more constructive interaction when his arousal level has been lowered by the cut-off behavior.<sup>1</sup>

<sup>1</sup>Robert Hinde has drawn to our attention that Tinbergen had an alternative explanation for the turning away of the head in black-headed gulls (Tinbergen, 1959).

This hypothesis seems to be very relevant to an infant's averting his gaze from his mother, and indeed to other forms of avoidant behavior as well. Assuming that the infant, like the black-headed gull, has an approach-avoidance conflict, avoidant behavior tends to reduce the arousal level engendered by the conflict, and yet also to enable the infant to remain in proximity to his mother. To remain in proximity to his mother ensures not only that the biological function of attachment (i.e., protection) is operative but also that the situation is left open to the possibility of subsequent positive interaction.

Our interpretation of the paradoxical behavior shown by Group-A babies in the strange situation focused on the proposition that their attachment behavior was strongly activated both in the separation episodes (even though they tended not to show distress overtly) and in the reunion episodes (even though they avoided their mothers). Support for this proposition comes from Sroufe and Waters (1977b), who found characteristic heart-rate acceleration in both separation and reunion episodes among Group-A babies, as well as among B and C infants. Furthermore, just as the strange situation activates the attachment system at a higher level of intensity than the low-stress conditions normally pertaining at home (or in free-play laboratory sessions), it also activates A babies' approach-avoidance conflict more intensely so that the avoidant outcome is more conspicuous. The tendency for Group-A infants to maintain exploration at a relatively high level across separation and reunion episodes was interpreted in Chapter 7 as a displacement behavior. This interpretation is also supported by Sroufe and Waters, who report absence of the intermittent decelerations of heart rate that normally occur in exploratory activity, as though the displacement exploration lacked the moments of interested attentiveness characteristic of true exploration.

Our emphasis upon conflict relevant to close bodily contact in Group-A babies should not make us lose sight of the fact that they are anxious as well as avoidant. They show more separation distress in little everyday separation situations at home than do Group-B babies, and they cry more in general. Their mothers, like the mothers of Group-C infants, are relatively unresponsive to infant signals and communications throughout many contexts in the course of the first year. Indeed the rigidity and suppressed anger of Group-A mothers would obviously interfere with sensitive responsiveness to infant cues. Consequently, Group-A babies, like Group-C babies, lack confidence in their mothers' accessibility and responsiveness. The anxiety implicit in the Group-A attachment relationship surely must itself make the approach-avoidance conflict more intense than it might otherwise be, for the attachment behavior of an anxious baby tends to be more readily activated and at a more intense level. Furthermore, as Bowlby (1969) pointed out, rebuffer itself intensifies attachment behavior.

Nevertheless the avoidant behavior characteristic of the Group-A baby in the strange situation represents a method of coping with a very difficult kind of

conflict situation. Avoidance short circuits direct expression of anger to the attachment figure, which might be dangerous, and it also protects the baby from reexperiencing the rebuff that he has come to expect when he seeks close contact with his mother. It thus somewhat lowers his level of anxiety (arousal). It also leads him to turn to the neutral world of things, even though displacement exploratory behavior is devoid of the true interest that is inherent in nonanxious exploration.

What the long-term outcome of mother avoidance in infancy may be is yet to be ascertained. The findings of Connell (1976), Main (1973, 1977b; Main & Londerville, 1978), and Matas (1977) strongly suggest, however, that the Group-A pattern persists into the second year of life, with consequent deficiencies in exploratory behavior and cooperativeness and difficulties with inappropriate aggression and in establishing harmonious interaction with adult figures. Furthermore, Main and Londerville found that they showed continuing tendencies to avoid the mother. To be sure, it is possible that both Group-A and Group-C children may later experience better interaction with their mothers or somehow find other relationships that offer compensatory experiences for a continuing anxious attachment to the mother figure. Even so, it may well be that early experiences of anxiety and conflict in the mother-attachment relationship are difficult to overcome altogether, that the anxiously-attached infant may grow into a child who is very cautious about trusting the accessibility and responsiveness of later attachment figures, and that the mother-avoidant infant may continue to be somewhat detached in his interpersonal relationships, and chary of establishing close interactions. Longitudinal research is desperately needed. In such research, behavior in the strange situation at the end of the first year might well provide an anchor point against which subsequent developments could be judged.

Assertion of the future value of the strange situation in longitudinal research provides us with an occasion for inserting a note of caution about the scoring of avoidant and resistant behavior (especially the former) in the reunion episodes. To the untutored eye, avoidance is not easy to see. The Group-A infant who is active, not distressed, not wary with the stranger, and who does not cling to his mother in the reunion episodes appears to many—including experienced developmental psychologists—as a robust, friendly, independent child. It is only when one is reminded that this is an unusual way for a 1-year-old to behave in separation and reunion episodes in a strange environment and that only infants who have had a characteristic kind of experience of rejection by their mothers show this pattern, that one is inclined to take avoidance seriously. Looking away (gaze aversion) can be distinguished from looking toward something or someone else, even without the benefit of heart-rate monitoring. The baby does not seem to be looking at anything in particular when he averts his gaze, but at the floor or at his hands; and even though he may look toward one specific aspect of the physical environment, such as a

toy, he gives no evidence of interest. Similarly, ignoring the mother in the reunion episodes is viewed as avoidance because of the context in which it appears—the mother's return after an absence and usually also her efforts to attract the baby's attention and/or approach. As Marvin (1977) has shown, 3- and 4-year-olds who do not seek proximity to their mothers on reunion nevertheless tend not to ignore her, but rather converse with her, show her what they have been playing with, and the like. At home a baby may be so preoccupied with his play that he notices neither when his mother leaves the room nor when she returns. This can't be the case with the 1-year-old in the strange situation who registers his mother's departure when she says "Bye, bye!" to him, who may even search for her when she is absent, but who steadfastly refuses to acknowledge her return, except perhaps with an initial neutral look. Furthermore, even postural adjustments that imply turning away may be overlooked if one is not trained to observe avoidance.

At high levels of intensity of activation, resistant behavior is more difficult to overlook. But minor and subtle manifestations of resistance, especially when not accompanied by any overt angry behavior, may pass unnoticed by the inexperienced observer. As with avoidant behavior, the observation of resistant behavior requires training and/or experience.

CONCLUSION

From the beginning our interest in the strange situation was focused on individual differences. As we pointed out in the preface to this volume, the procedure was devised as a standardized laboratory situation in which we could observe behavior of infants about whom we already had much information concerning behavior in the natural environment of the home. Even though the three questions we hoped would be clarified by the strange situation were, in a sense, normative questions (i.e., use of mother as a secure base for exploration, response to separation, and response to a stranger—all in an unfamiliar environment), the major thrust of this aspect of our research has focused on individual differences.

Quite beyond our initial expectations, we submit, the strange situation has proved useful for the identification and exploration of individual differences in the quality of infant-mother attachment. Nevertheless we must emphasize that individual differences in strange-situation behavior would have been well-nigh uninterpretable without extensive data about correlated individual differences in other situations, and especially without the naturalistic data that we collected in regard to Sample I at home throughout the first year of life. To be sure, one should be conservative in generalizing from a sample of 23 infants from whom both longitudinal, naturalistic data and strange-situation data were available. The many confirming studies that compare s e-situation



behavior with behavior in other situations served sufficiently to overcome our basic conservatism and to prompt this book, in the belief that the total effort herein presented (1) throws important light on the concept of infant-mother attachment as viewed from an evolutionary-ethological standpoint, and (2) offers a procedure, much better validated than others, for assessing individual differences in attachment. Research into early social development has been greatly handicapped by a dearth of valid measures. Furthermore, evaluation of alternative methods of infant care—including evaluation of interventions—has also been handicapped by lack of appropriate and valid measures of outcome. It is our hope that this detailed account of strange-situation behavior and its correlates may be useful in future research, much of which must necessarily be focused on the effect on social development in general (and on attachment in particular) of various alternative modes of infant care, whether occurring naturally or as a result of programs of intervention.

We would be the first to acknowledge that research into the important attachments a person forms in the course of his life span has just begun. It made sense to us to begin at the beginning, and to focus on what is obviously one of the most important attachments—namely, that of an infant to his mother figure or principal caregiver. It is our hope that our work relevant to this early and important attachment will provide a useful background for further investigation of both this and other types of attachment. Let us acknowledge that research into attachment relationships is extremely complex. It is a pity that this complexity and difficulty so long delayed a beginning. Let us hope that we can dare to continue to face these complexities and difficulties, and finally tackle intensive and comprehensive research into one of the most important aspects of human behavior and development.

## APPENDIX I

### Instructions to the Mother

This is a set of instructions to explain what will happen from the moment you arrive at Room \_\_\_\_\_ in \_\_\_\_\_. Here we will discuss any questions about the observation of the baby in the strange situation, and leave coats. When we are all ready to proceed, you will be shown the door of the observation room, then taken into the experimental room. You will stay with your baby in the experimental room until the end of Episode 3 (see below). Then you may go into the observation room to watch him/her through a one-way vision mirror.

We would like to stress an important aspect of your role in the strange situation: Try to be as natural in your responsiveness to the baby as you would generally be. Do not actively engage him in play with the toys in the first three episodes until we give you the signal to do so, but feel free to respond to his advances (smiling, approaching, etc.) as you ordinarily would at home. If the baby is distressed at any time while you are in the room, please feel free to react as you normally would in order to make him comfortable again. We want to watch the baby's spontaneous response to the toys and to the strangeness of the situation. For this reason we ask the mother not to intervene and attract her baby's attention. Yet we don't want the baby to feel that his mother is acting strangely.

Thus, yours is a delicate task of reassuring the baby of your support as you would normally do when he seems to need it, without interfering with his exploratory behavior.

## EPISODES

*Episode 1. Mother, Baby, Experimenter.* We will show you into the experimental room with the baby. We want to see how the baby reacts to a new environment from the safety of his mother's arms. You will therefore

carry the baby into the room. The experimenter will show you where to put him down and where you are to sit, and then he (she) will leave.

*Episode 2. Mother, Baby (3 minutes).* As soon as the experimenter has left, you are to put the baby down on the floor on the specified spot, facing the toys. You then go to your chair and pretend to read a magazine. You will respond to the baby quietly if he makes overtures to you, or reassure him if he is uneasy or upset, but you are not to try to attract the baby's attention. We want to see the kind of interest the baby has in a new situation. If the baby spontaneously begins to play with the toys or to explore the room, we let him continue to do so without interruption for 3 minutes. If, at the end of 2 minutes, he has not begun to play with the toys, a knock will sound on the wall signaling you to take him over to the toys and to try to arouse his interest in them. Then, after a moment, you will go back to your chair, and we will see what he does for 1 additional minute.

*Episode 3. Stranger, Mother, Baby (3 minutes).* A stranger—a woman—enters, introduces herself briefly, and then goes to her chair, across the room from yours, and sits quietly for 1 minute. Then she will engage you in conversation for 1 minute, and, finally, she will invite the baby's attention for 1 minute. Throughout this, you are to sit quietly in your chair and talk only when the stranger talks with you. The first two knocks on the wall will be cues to the stranger to change her activities. We wish to observe the baby's responses to gradually increased attention from a stranger, with his mother present but not active. When the third knock comes, you are to leave the room as unobtrusively as possible leaving your handbag behind on your chair. Please close the door when you leave.

*Episode 4. Stranger, Baby (3 minutes or less).* You are to come to the observation room to watch the baby through the one-way glass. Meanwhile the stranger remains with the baby. We want to see what the baby's interest is in an unfamiliar room with only a stranger present. Some babies become upset when their mothers leave. Should your baby become too upset, we will terminate the episode. If you feel that the episode should be terminated, just tell us, and you can go back to the experimental room immediately.

*Episode 5. Mother, Baby (3 minutes or more).* Someone will tell you when it is time to begin the episode. You will go to the door of the experimental room and, before opening it, call to the baby loudly enough for him to hear you through the closed door. Pause a moment, then open the door and pause again. We are interested to see how the baby will greet his mother spontaneously after she has been absent. After this pause, greet the baby and make him comfortable for the next episode, finally settling him on the floor.

interested in the toys. After 3 minutes, or when the observer judges that the baby is settled enough to be ready for the next episode, he will signal by a knock on the wall. This will give you your cue to leave the baby alone in the room.

*Episode 6. Baby Alone (3 minutes or less).* After the knock comes, pick a moment when the baby seems cheerfully occupied with the toys, get up, put your handbag on your chair, and go to the door. Pause at the door to say "bye-bye" to the baby, and then leave the room, closing the door behind you. Come again to the observation room to watch him through the one-way glass. We want to see how the baby reacts to your departure and what he will do all by himself in a strange room. He may be quite content, but if he becomes too upset we will terminate the episode.

*Episode 7. Stranger, Baby (3 minutes or less).* The stranger enters, and we can see how the baby reacts to a stranger, without his mother present and after being alone. If he has been unhappy without his mother, we want to see whether he can be comforted by a stranger. In any case, we want to see whether he will play with her or with the toys in her presence.

*Episode 8. Mother, Baby (3 minutes).* Someone will tell you when it is time to go back into the experimental room. This time you can go directly in, but after opening the door pause for a moment to see what the baby will do spontaneously when he sees you. Then talk to him for a moment, then pick him up. We will come to the door to tell you when the episode is over. In the meantime do whatever seems the natural thing to do under the circumstances.